National Institute of Environmental Health Sciences

Association of day length and weather conditions with physical activity levels in older community dwelling people

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Year: 2014

Journal: PLoS One. 9 (1): e85331

Abstract:

Background: Weather is a potentially important determinant of physical activity. Little work has been done examining the relationship between weather and physical activity, and potential modifiers of any relationship in older people. We therefore examined the relationship between weather and physical activity in a cohort of older community-dwelling people. Methods: We analysed prospectively collected cross-sectional activity data from community-dwelling people aged 65 and over in the Physical Activity Cohort Scotland. We correlated seven day triaxial accelerometry data with daily weather data (temperature, day length, sunshine, snow, rain), and a series of potential effect modifiers were tested in mixed models: environmental variables (urban vs rural dwelling, percentage of green space), psychological variables (anxiety, depression, perceived behavioural control), social variables (number of close contacts) and health status measured using the SF-36 questionnaire. Results: 547 participants, mean age 78.5 years, were included in this analysis. Higher minimum daily temperature and longer day length were associated with higher activity levels; these associations remained robust to adjustment for other significant associates of activity: age, perceived behavioural control, number of social contacts and physical function. Of the potential effect modifier variables, only urban vs rural dwelling and the SF-36 measure of social functioning enhanced the association between day length and activity; no variable modified the association between minimum temperature and activity. Conclusions: In older community dwelling people, minimum temperature and day length were associated with objectively measured activity. There was little evidence for moderation of these associations through potentially modifiable health, environmental, social or psychological variables.

Source: http://dx.doi.org/10.1371/journal.pone.0085331

Resource Description

Communication: ☑

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience: ☑

audience to whom the resource is directed

Public

Exposure : ☑

weather or climate related pathway by which climate change affects health

Precipitation, Temperature

Geographic Feature: ☑

resource focuses on specific type of geography

Rural, Urban

Geographic Location: ☑

resource focuses on specific location

Non-United States

Non-United States: Europe

European Region/Country: European Country

Other European Country : Scotland

Health Impact: ☑

specification of health effect or disease related to climate change exposure

General Health Impact, Mental Health/Stress

Mental Health Effect/Stress: Stress Disorder

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

Population of Concern: A focus of content

Population of Concern: ☑

populations at particular risk or vulnerability to climate change impacts

Elderly, Low Socioeconomic Status

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

Climate Change and Human Health Literature Portal

A focus of content